

REMARKS

Under this Amendment, applicant has amended independent Claims 1, 8, and 12 to more clearly define over the prior art, has amended Claims 2, 3, 4, 6, 7, 9, 10, and 11, and has cancelled Claim 5 without prejudice to the subject matter therein, and for these reasons, reconsideration of this application is respectfully requested.

In paragraph 1 of the Office Action, it is stated: "Since this application names an inventor or inventors named in the prior application(09/614,107), it may constitute a continuation-in-part of the prior application." However, this suggestion is not understood because this application conforms to 35 USC 120 and 37 CFR 1.78 on page 2 of the application under a section identified as "RELATED APPLICATION", and this application is also cited as a parent application in the Oath as originally filed. It is requested that the word "may" be withdrawn since in fact, this application is a continuation-in-part of that prior application, which in turn is a continuation-in-part of U.S. Serial No. 09/344,172, which issued into U.S. Patent No.

6,354,961 on March 12, 2002. The specification has been amended to reflect the issuance of this latter application in the above amendment.

The drawings have been objected to because various reference numerals are not contained in certain Figures, and this has been corrected in the accompanying "PROPOSED DRAWING CHANGES". With the Examiner's approval, these changes will be executed upon either the indication of allowable subject matter in this application, or alternatively, upon the issuance of a Notice of Allowance.

In paragraph 3, the disclosure is objected to because of the informalities in the drawings with the conclusions that "The disclosure is insufficient." Since correction has been made, it is respectfully requested that this objection be withdrawn. O

Claims 1-12 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for the reasons stated below:

"In Claims 1, 8, 9, and 12, the recitation of 'engaging' or 'engagement' of the unit cellular structure with the face wall is indefinite. The Examiner is not certain if this terminology is used in lieu of 'joined' or 'abutted' or if it is used to describe a simple connection of the unit cellular structure with the face wall. In addition, the area of 'engagement' between the unit cellular structure and the face wall is not defined or identified in the drawings. O

Claims 6, 7, 11, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In these Claims the recitation of 'a plurality of ribs', 'ribs', 'first bar portion' and 'second bar portion' is indefinite. Applicant's terminology is not consistent with the disclosure on Pages 21-22. Appropriate correction is required.,

6. Claims 6, 7, 11 and 12 recite the limitation 'a plurality of ribs', 'ribs', first and second 'bar portion'. Likewise, Claim 4 recites 'unit cellular structure is open over 60% of the area of the unit cellular structure.' There is insufficient antecedent basis for these limitations in the claim."

The indefiniteness in Claims 1, 8, 9, and 12 with respect to the term "engaging" or "engagement" is believed corrected by the addition of the recitation in these Claims: "said unit cellular structure wall being generally planar and being attached to and supported solely by the perimeter wall". Thus, there is now no indefiniteness as to the connection between the second wall and the face wall because the former is now recited as being attached to the perimeter wall. ②

In Claims 7, 11, and 12, the term "ribs" has been replaced by "bars" or "bar" portion so that this objection is now believed obviated.

Claims 1-12 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 2, and 10-12 of U.S. patent No. 4,930,781(Allen '781) in view of the Lu'814(Lu), Anderson, et al.'419(Anderson) and Raymond(sic Raymont) '399.

Firstly, before delving into the reasons for this rejection set forth in the Office Action, applicant would like to point out that the '781 Allen patent issued in June of 1990, almost 12 years prior to the March 12, 2002, issuance of U.S. Serial No.09/344,172, now U.S. Patent No. 6,354,961 B1. There is no need for a double-patenting rejection because U.S. Patent No. 4,930,781 has no co-pendency with any of the parent applications, so the entire specification is prior art and is assumed herein to be prior art, and thus applicant, in responding to this rejection, will simply treat it as an obviousness-type rejection under 35 USC 103 and not a double patenting rejection.

In rejecting Claims 1-12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 2, and 10-12 of U.S.

Patent No. 4,930,781(Allen '781) in view of Lu '814(Lu), Anderson, et al. '419(Anderson) and Raymond(sic Raymont) '399 (Raymont), it is stated:

"Allen '781 discloses a golf club head, comprising: a club head body having a face wall with a ball striking surface and a rear surface, a perimeter wall surrounding the face wall and attached to the perimeter of the face wall, and a unit cellular structure formed from the face wall positioned immediately behind and engaging the rear surface of the face wall. Allen '781 also discloses that the unit cellular structure includes a plurality of open cells surrounded by other open cells. However, Allen '781 fails to disclose that the unit cellular structure is generally planar and has a forward surface spaced rearwardly from the rear surface of the face wall less than 0.100 inches and that the unit cellular structure includes a plurality of ribs with open spaces between the ribs.

Lu teaches the use of a golf club head 10(Figures 1-5, Column 4, lines 24-29; Column 5, lines 52-64; Column 6, lines 4-67) comprising a face plate 14, an abutment 30 fixed in the club head body spaced rearwardly from the ball striking face wall and positioned sufficiently close to the face wall so the face wall impacts the abutment at a given club head speed, the abutment including a generally planar wall fixed in the club head body extending behind and across a substantial portion of the ball striking face wall, a perimeter wall 42 extending rearwardly from the face wall 14, and the club head body receiving the perimeter wall and the face wall.

Anderson teaches the use of a golf club head 10(Figures 1-7; Column 3, lines 8-39; Column 5, lines 15-20), comprising: a club head body having a face wall with a ball striking sur-

face and a rear surface, and a reinforcement structure 18 formed separately from the face wall and positioned immediately behind engaging the rear surface of the face wall (Column 5, lines 15-20).

Raymond(sic Raymont) teaches the use of a golf club head with a unit cell structure which includes a plurality of ribs with open spaces between the ribs (Figures 1-10; Column 5, lines 8-34; Column 6, lines 23-67). Raymond(sic Raymont) also teaches that the ribs have a 'T' shaped cross section and define a honeycomb-like structure (Column 5, lines 8-34; Column 6, lines 43-67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the abutment wall spaced from the face wall as taught by Lu; the abutment wall formed separately and positioned as taught by Anderson; and the unit cell structure as taught by Raymond(sic Raymont) in the Allen '781 device to provide the means to increase the modulus of elasticity of the face wall at lower manufacturing cost.

It would also be obvious to an artisan skilled in the art of manufacturing the golf club heads that the modified Allen '781 golf club heads would incorporate a variation in thickness of the face wall and the structure of the unit cellular wall, a varying distance between the unit cellular structure and the face wall, a varying modulus of elasticity of the face wall, and designation of the range of club head speed appropriate for a specific club head, the same properties as claimed in the instant application."

Firstly, even assuming it would be obvious to add the Lu abutment wall separately to the Allen head construction, and even assuming that such a structure could include the unit cellular structure in the Raymont patent, such would still not anticipate the present invention.

More particularly, Claims 1, 8 and 12, as well as the Claims that depend therefrom, have been amended to recite: "said unit cellular structure wall being generally planar and being attached to and supported solely by the perimeter wall, said unit cellular structure including a plurality of cells surrounded by other cells with each of the cells including a central opening extending completely through the unit cellular structure wall". Firstly, in Lu, the secondary wall is not supported solely by the perimeter wall and instead is supported by this rather complex structure 32 that extends inside to the rear of the head.

Secondly, in applicant's construction the openings extend completely through the secondary wall to provide a very light-weight construction. This is emphasized by the recitation that each of the cells "include a central opening extending completely through the unit cellular structure wall." In Raymont, as well as in the Allen '781 patent, the unit cellular structure is integral with a planar wall,

which increases the weight of the composite structure. In the present design, there is no planar wall attached to the cellular structure, and instead the openings extend completely therethrough providing a much more light-weight design.

For the above reasons, it is respectfully believed that Claims 1, 4, 8, and 12, as well as the Claims that depend therefrom, are patentable over any combination of the Allen '781 patent in view of the Lu '814 patent, the Anderson, et al. '419, and the Raymont, '399 patent, in any way that would be obvious to one with skill in the golf club art.

Claims 1-7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1 and 13-19 of copending Application No. 09/614,107(Allen '107) in view of Allen '951, and Anderson, et al., '419.

Applicant is submitting herewith a Terminal Disclaimer with respect to any patent issuing on the copending Application Serial No. 09/614,107, so that this rejection is now believed obviated.

Claims 1-12 have been rejected under 35 USC 103(a) as being unpatentable over Lu in view of Raymond(sic Raymont), Anderson, and either Chou '081(Chou) or Kosmatka '547(Kosmatka) with the statement:

"Lu discloses the use of a golf club head 10(Figures 1-5; Column 4, lines 24-29; Column 5, lines 52-64); Column 6, lines 4-67) comprising a ball striking face wall 14, a perimeter wall 42 extending rearwardly from the face wall 14, and the club head body receiving the perimeter wall and the face wall; an abutment wall 30 fixed in the club head body spaced rearwardly from the ball striking face wall and positioned sufficiently close to the face wall so that the face wall impacts the abutment wall at a given club head speed as claimed by the Applicant. Lu also discloses that the gap between the face wall and the abutment structure is between 0.001-0.30 inch(Column 6, lines 18-24); Column 8, lines 64-65) and substantially parallel to the abutment wall (Figures 1-5).

However, Lu fails to disclose a unit cellular structure formed separately using 'T' shaped beams or ribs and designed to be used at club head speeds under 110 mph.

As recited above, Raymond(sic Raymont) teaches the use of a unit cell structure using 'T' shaped beams or ribs. Anderson teaches the use of an abutment wall formed separately and engaging the rear surface of the face wall.

Kosmatka teaches the use of a golf club head(Figures 1-4); Column 4, lines 23-67); Column 5, lines 48-67) with the face wall having a thickness in the range of 0.010 inch to 0.250 inch and an abutment disposed rearwardly to the face wall(Column 6, lines 1-33). Kosmatka also teaches the club head is

capable of imparting a high coefficient of restitution for speeds less than 110 miles per hour(Column 2, lines 39-57).

Chou teaches the use of a wood-type golf club head(Figures 1-11); Column 3, lines 5-54, Column 2, lines 15-20) including an impact wall 16, the impact wall comprising: a thin and flexible faceplate 16 in the front part; and an abutment wall 14 disposed rearwardly to the face wall, the faceplate and the abutment wall being spaced at a predetermined gap 18(Column 5, lines 50-54). Chou also teaches that the club head is capable of imparting a high coefficient of restitution for speeds less than 110 miles per hour(Column 5, lines 47-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the arrangement taught by Raymond(sic Raymont), Anderson and either Chou or Kosmatka in the Lu device to manufacture golf club heads with thin, flexible face walls for improved energy transfer to a golf ball using a unit cell structure as an abutment means for limiting the deflection of the face wall during a high speed impact with the golf ball. An artisan skilled in the art of manufacturing the golf club heads would recognize that the modified Lu device would incorporate a variation in thickness of the face wall and the structure of the unit cellular wall, a varying distance between the unit cellular structure and the face wall, a varying modulus of elasticity of the face wall, and designation of the range of club head speed appropriate for a specific club head, the same properties as claimed in the instant application."

This rejection is essentially incorrect for the reasons set forth with respect to the above combination of Lu, Anderson, and Raymont with Allen.

With all due respect to the Examiner, however, all of the original Claims did not include the openings that extend completely through the secondary wall.

For the above reasons, Claims 1-12 are believed patentable over any combination of Lu, in view of Raymont, Anderson, Chou or Kosmatka that would be apparent to one with skill in the art.